

What is claimed is:

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1. A sling for insertion into a patient comprising:
a surgical sling adapted to support the urethra in its normal anatomic position
and to prevent abnormal urethral descent under intraabdominal pressure;
said surgical sling comprising a length of material having a longitudinal axis, and
a latitudinal axis;
wherein said material has a first elongation property along said longitudinal axis,
and a second elongation property along said latitudinal axis.

said first and second elongation property being different from each other.

2. The sling as set forth in claim 1, wherein said second elongation property is
greater than said first elongation property.

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3. The sling as set forth in claim 1, wherein said first elongation property is
approximately 8% elongation beyond a normal state of said sling material when said
sling material is subjected to a tension of approximately 5 lbs.

3 4. The sling as set forth in claim 3, wherein said second elongation property is
approximately 36% elongation beyond a normal state of said sling material when said
sling material is subjected to a tension of approximately 5 lbs.

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5. The sling as set forth in claim 1, wherein said first elongation property is in the
range of approximately 24%-28% elongation beyond a normal state of said sling
material when said sling is subjected to a tension of approximately 20 lbs.

5 6. The sling as set forth in claim 4 wherein said second elongation property is in the
range of approximately 65%-75% elongation beyond a normal state of said sling
material when said sling is subjected to a tension of approximately 20 lbs.

7. The sling as set forth in claim 1, wherein said sling is coated with a substance
that enhances biocompatibility.

8. The sling as set forth in claim 7, wherein said material comprises a surgical mesh material.

9. The sling as set forth in claim 8, wherein said substance is silicone.

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B9 10. The sling as set forth in claim 9, wherein said coated mesh has a thickness within the range of approximately .024" (0.61 mm) to .036" (0.914 mm).

11. The sling as set forth in claim 7, wherein said material is impregnated with therapeutic agent.

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B9 12. The sling as set forth in claim 7, wherein said first elongation property is in the range of approximately 19.5-21.5% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 20 lbs.

8/13 13. The sling as set forth in claim 12 wherein said second elongation property is in the range of approximately 120-130% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 20 lbs.

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B9 14. The sling as set forth in claim 7, wherein said first elongation property is approximately 2.5% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 5 lbs.

15. The sling as set forth in claim 7, wherein said second elongation property is approximately 65% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 5 lbs.

16. The sling as set forth in claim 7, wherein said first elongation property is approximately 10.5% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 5 lbs.

17. The sling as set forth in claim 7, wherein said second elongation property is approximately 25% elongation beyond a normal state of said sling material when said sling material is subject to a tension of approximately 5 lbs.

18. A method of making a sling for treating urinary incontinence comprising:
providing a mesh material suitable for constructing a sling for supporting a urethra, said mesh having a first elongation property in a longitudinal direction and a second, different, elongation property in a latitudinal direction;
providing a coating dispersion;
coating said mesh material with said coating dispersion; and
manipulating said mesh material during said coating so as to create a predetermined value for said first and second elongation properties in said mesh material.

19. A method as set forth in claim 18, wherein said coating is performed using a silicone dispersion.

20. A method as set forth in claim 18, wherein said mesh material is held in pre-tension in a longitudinal direction during said coating.

21. A method as set forth in claim 18, wherein said mesh material is held in pre-tension in a latitudinal direction during said coating.

22. A method as set forth in claim 18, wherein said manipulating of said mesh includes holding said mesh in pre-tension.

23. A method according to claim 18, wherein the step of coating said mesh material includes the step of continuously coating an elongate strip of said material.

24. A method according to claim 18 further including the step of blowing fluid such as air on the coated mesh material.

25. A method according to claim 24 wherein the step of blowing air includes the step of using pulsed air.

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26. A sling for insertion into a patient comprising:
a surgical sling adapted to support the urethra in its normal anatomic position
and to prevent abnormal urethral descent under intraabdominal pressure;
said surgical sling comprising a length of material having a longitudinal axis, and
a latitudinal axis;
wherein said sling comprises a plurality of regions along its longitudinal
axis and wherein each region contains differing elongation properties from an
immediately adjacent region.

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27. A sling as set forth in claim 26, wherein said sling material has a coated central
region having an increased longitudinal elongation property and a somewhat decreased
latitudinal elongation property as compared to elongation properties of said central
region in a normal state.

14 28. A sling as set forth in claim 27, wherein said sling material has a coated
intermediate region on either side of said central region, each of said intermediate
regions having a decreased longitudinal elongation property and an increased latitudinal
elongation property as compared to elongation properties of each of said intermediate
regions in a normal state.

15 29. A sling as set forth in claim 28, wherein said sling material has a coated end
region adjacent each intermediate region, each of said end regions having a decreased
longitudinal elongation property and an increased latitudinal elongation property as
compared to elongation properties of each of said end regions in a normal state.

30. A method of restoring urethral anatomy in a patient suffering from urinary
incontinence comprising the steps of:

providing a silicone coated sling,
inserting a silicone coated sling into the patient's pelvic cavity;
manipulating said sling so as to pass under a central region of the patient's
urethra;

attaching each end portion of the sling to a posterior/inferior region of a right and a left pubic bone of the patient; and

positioning the sling so as to restore and stabilize the urethra to a position that maintains urinary continence by orienting said sling such that said sling has a first elasticity in a direction spanning across the urethra and a second, different elasticity in a direction along the axis of said urethra.

31. A method according to claim 30 wherein the step of providing the silicone coated sling includes the step of providing a sling wherein the first elasticity is more than the second elasticity.

32. A method according to claim 30 wherein the step of providing the silicone coated sling includes the step of providing a sling wherein the first elasticity is less than the second elasticity.

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33. A method of placing a sling in a patient for the treatment of urinary incontinence comprising:

5 inserting a sling into the patient's pelvic cavity, the sling having indicia capable or indicating tension in the sling;

manipulating said sling such that it passes underneath a central region of the patient's urethra;

tensioning said sling until said sling achieves a predetermined tension as indicated by visual indicia present on said sling; and,

securing said sling within said patient.

34. A method according to claim 33, wherein tensioning said sling includes observing visual indicia in the form of a predetermined width reduction in said sling.

35. A method according to claim 33, wherein tensioning said sling includes observing visual indicia having the form of a geometric pattern.

36. A method according to claim 33, wherein tensioning the sling includes observing a geometric pattern having the form of a distortion in a hole pattern of the sling material.

37. A method according to claim 33, wherein tensioning the sling includes observing a geometric pattern in the form of a distorted shape integrated onto the sling.

38. A method according to claim 33, wherein tensioning said sling includes observing visual indicia in the form of words.

39. A sling suitable for use in a sling procedure to treat urinary incontinence comprising:

a mesh material having a predetermined length and a width;

said mesh material having predetermined elongation properties;

said mesh having a predetermined visual indicia present on said mesh corresponding to the presence of a predetermined tension in said sling, said predetermined visual indicia being absent from said mesh when said sling is free from tension.

40. A sling according to claim 39, wherein said visual indicia is a predetermined width of said sling.

41. A sling according to claim 39, wherein said visual indicia is a predetermined geometrical pattern of said sling.

42. A sling according to claim 41, wherein said predetermined geometrical pattern is a hole pattern in said mesh.

43. A sling according to claim 41, wherein said predetermined geometrical pattern is a geometrical shape integrated onto said mesh.

44. A sling according to claim 39, wherein said visual indicia is a word present on
~~said sling.~~

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